



Climate Resiliency Workgroup Meeting - Minutes

Monday, September 20, 2021

1:30 PM – 3:30 PM

Meeting Materials:

https://www.chesapeakebay.net/what/event/climate_resiliency_workgroup_crwg_september_2021_meeting

This meeting was recorded for internal use to assure the accuracy of meeting notes.

Action Items:

- Facilitate a follow up conversation with partners for utilizing jurisdictional tools like GreenPrint and ConserveVirginia in Chesapeake Bay Program data synthesis efforts related to marsh migration and land use.
 - o Aligns with action items 1.7a and 2.2a
- Solicit and incorporate feedback from CBP & partners regarding the workshop Anna Hamilton & Jordan West are planning. The workshop will take place no later than May 2022.
 - o Share information on the Marsh Adaptation workshop being planned by CRWG members and partners that is being determined for funding. Coordinate workshop topics to minimize overlap.
 - o Coordinate conversation between Peter Tango, Anna Hamilton, and Jordan West about potential workshop topics, such as reconciling the ability to project wetland habitats with difficulties in establishing current wetland indicators.

MINUTES

1:30 PM Welcome and Meeting Overview – Chair Mark Bennett (USGS) and Coordinator Julie Reichert-Nguyen (NOAA)

This meeting focused on:

- Presentations from organizations on how they are utilizing coastal wetland/marsh mapping, marsh migration models, and sea level rise scenarios to inform adaptation decision-making.
- Aligns with action items 1.3b, 1.7a and 2.2a in the [CRWG Logic & Action Plan](#).

1:35 PM Announcements:

- Welcome new STAR staffers: Alex Gunnerson & Amy Goldfischer
- [Request for Applications](#) - CBP 2025 Tidal Water Model for the Assessment of 2035 Climate Change Risk to the Chesapeake Bay TMDL Cooperative Agreement with EPA,

6 years from expected start date of 12/5/2021, estimated funding of \$1,650,000.

Application Submission Deadline: September 20, 2021

- FY21 CBP GIT Funding Program Manual [HERE](#)
- Maryland Department of Natural Resources' Grants Gateway is open for FY23 resilience and restoration funds. Proposals are due by December 15, 2021.
<https://news.maryland.gov/dnr/2021/07/19/grants-gateway-open-for-fy23-resilience-and-restoration-funds/>

1:40 PM GreenPrint - Rachel Marks (MD Department of Natural Resources)

Rachel Marks shared information on the Maryland Department of Natural Resources' GreenPrint/Parcel Evaluation Tool. This tool was created to evaluate the conservation benefits and ecosystem value of parcels of land across Maryland. Updates to the tool includes removal from the prioritized targeted ecological areas, parcels that will be subject to sea-level rise inundation by 2050 to avoid spending limited funding in areas likely to be submerged. Predictive models were also used to determine priority "Wetland Adaptation Areas," or corridors where wetlands will migrate inland as sea level rises. Wetlands provide a natural buffer against the impacts of coastal hazards such as sea-level rise and storm surge, ecological functions, such as critical fish and wildlife habitat, carbon sequestration, water filtration, as well as recreation.

- [Presentation:](#)
 - Purpose – evaluate benefits of land parcels to prioritize for long term conservation while keeping the impacts of climate change in mind
 - Two components:
 - Conservation benefit assessment
 - Provides expert developed rating for lands acquired by state
 - Example of benefits incorporated in tool: Habitat connectivity, rare species and wildlife habitat, support for aquatic species
 - Provides information to assess coastal community resilience – areas along shorelines with marsh and coastal forests that have potential to reduce impacts of coastal hazards
 - Provides information on future wetland habitat – parcels that have potential for marsh migration
 - Provides information on targeted ecological areas for conservation funding through Stateside Program Open Space
 - Ecosystem Service assessment
 - Eco-Price Calculator: uses social value not market value
 - Example: Nitrogen removal
 - Absolute Values: what different resources add
 - Example: groundwater recharge rates, carbon sequestration, stormwater mitigation/flood prevention index
 - Additional resources online – see slides 24 & 25 of the presentation
 - Example: GreenPrint Webportal: geodata.md.gov/greenprint/
 - Discussion:
 - Peter Claggett asked: Will the CBP's 2017 high-resolution land use data be used to remap Maryland's green infrastructure?
 - Rachel Marks: Yes. Through partners with Chesapeake Conservancy, this data along with their high resolution, LiDAR derived hydrography dataset, will be integrated into the primary dataset.
 - Kevin Du Bois asked: Is the data source for future wetland habitat open to the public?

- Rachel Marks and Nicole Carlozo: Yes. We are currently re-running SLAMM so plan to update these data sometime next year:
<https://data.imap.maryland.gov/datasets/maryland::maryland-sea-level-rise-wetland-adaptation-areas/about>.
- Jennifer Miller Herzog asked: Are the price signals updated on a regular schedule, and if so at what interval? Or does it happen when a significant component of the pricing average changes?
 - Rachel Marks: They are currently not on a regular schedule. They will be updated when new data sets become available, like new land cover datasets or when new models are released.
- Scott Phillips mentioned: Rachel, the Chesapeake Conservation Partnership will be updating their Conservation Atlas for the entire watershed. Seems like really good opportunities to use ideas being considered by MD. Have you already been working with them?
 - Just a question was posted and there was no further discussion on this point due to time constraints.
- Kevin Du Bois asked: Is there any consideration of the lands in the Middle Chesapeake Sentinel Landscape; how would that fit into this assessment?
 - Rachel Marks: At the moment, the GreenPrint/Parcel Evaluation Tool does not take the Middle Chesapeake Sentinel Landscape into account. This is something that they will consider and seems to align with their values.
 - Jackie Specht: TNC has secured funding through the REPI program to protect parcels in the Middle Chesapeake Sentinel Landscape. We are talking with MDNR to pilot resilience easements on these parcels and to inform the easement assessment framework.
 - Jennifer Miller Herzog indicated her interest in the work TNC is doing here.
- John Wolf said: Rachel has also been kind to aggregate ecosystem services information to Catchments in Maryland so they can be considered alongside other catchment scale landscape metrics.
 - Rachel Marks: I produced some code that may be of use to others working with ecosystem services. If interested, reach out.
- Contact information:
 - Rachel Marks - rachel.marks@maryland.gov
 - Jackie Specht - jackie.specht@tnc.org
 - Kevin Du Bois - kevin.r.dubois.civ@us.navy.mil
- Resources:
 - <https://geodata.md.gov/greenprint/>
 - <https://watershedresourcesregistry.org/map/?config=stateConfigs/maryland.json>

2:10 PM ConserveVirginia – Joe Weber (VA Department of Conservation and Recreation)

Joe Weber shared information on ConserveVirginia, which is a key tool for determining conservation investments. It provides a map of Virginia's highest conservation value lands based on nine parameters, including floodplains and flooding resilience and protected landscapes resilience. Mapped priorities include those wetlands identified as above average and far above average resilience indicating the greatest long-term potential for adaptive response, based on a projected rise in sea level of six feet. Coastal resilience is also addressed via wetlands identified by the VIMS model that represent the highest class in estuarine and freshwater areas that provide the highest ecological services and provide for the highest marsh migration potential to adjacent natural lands.

- Presentation:
 - ConservationVision – Virginia’s Conservation Planning Atlas (different from ConserveVirginia)
 - ConserveVirginia
 - Recently codified into law, July 2021; includes a chief resilience officer position
 - Seven categories of 21 priorities
 - Example of priorities: Natural Habitat & Ecosystem Diversity, Agriculture & Forestry, Protected Landscapes Resilience, etc.
 - Floodplains & Flooding Resilience – deep dive
 - Water Quality Improvement – data and considerations; protected vegetative buffers that would be most effective for water quality; restoration BMP opportunity areas
 - Wide variety of data providers, only uses “Highest quality” data classes, meaning only the most protected categories
 - Includes priority areas for protected landscapes resilience under various ownership, information on floodplains and flooding resilience (coastal and inland); riverine flooding based on VA Hazard Mitigation Plan – focuses on forests and ag lands upstream of the 10 worst flooding disasters; coastal flooding uses TNC Coastal Ecological Resiliency areas indicating greatest long-term potential for adaptive response (utilizes VIMS Marsh Migration and Marsh Building Model) – highest ecological services with highest marsh migration potential
 - Example of a success story in the Chesapeake Bay Watershed: Eastern Shore Forest Conservation Initiative
 - Contains the Natural Heritage data explorer
- Discussion:
 - Kevin Du Bois asked: Military installations with significant natural resources have an Integrated Natural Resource Management Plan. Are military properties or their plans integrated into Conserve VA?
 - Joe Weber: Not currently in ConserveVirginia, and that reason might be that only lands that are conserved in perpetuity are included in the database. There are still plenty of other ways in which DCR and DoD can collaborate.
 - Julie Reichert-Nguyen: Asked about outreach strategy to get county and local government to utilize ConserveVirginia to inform decisions.
 - Joe Weber: ConserveVirginia is part of the scoring criteria for the Virginia Land Conservation Fund, so county and local officials are incentivized to utilize it.
 - Joe Weber: Main user of data is landowners of conservation easements and trusts. State departments and agencies are heavy users as well.
 - Scott Phillips: Asked about the connection with the Chesapeake Conservation partnership.
 - Joe Weber: ConservationAtlas was analyzed to compare with goals and to determine alignment.
 - Joe Weber: Potential future alignment with the next version of ConserveVirginia.
 - Christopher Spaur: Are terrestrial migration corridors included for climate change?
 - Joe Weber: This issue falls under the “natural habitat and ecosystem diversity category.” The main input is resiliency corridors of the natural landscapes assessment.
- Resources

- <https://www.youtube.com/watch?v=E1cy03ZMJoU&t=80s>
- <https://www.dcr.virginia.gov/conservevirginia/>

2:40 PM Delaware Bay Estuary Project – Anna Hamilton (Tetra Tech) & Jordan West (US EPA)

Anna Hamilton shared information on the Relative Wetlands Vulnerability Framework (RWVF) Coastal Pilot Study, a collaborative effort with the Partnership for the Delaware Estuary. This study assessed relative marsh vulnerabilities to SLR and storm surge while considering marsh condition. The SLAMM model was used to assess gains and losses of marsh habitat in response to SLR, considering the protection status of adjacent dry land and related possibility for marsh migration. The application of vulnerability results to marsh management decisions was considered.

Jordan West summarized the draft structure for a coastal resilience workshop being planned for spring 2022, which will explore lessons learned across various adaptation research and application projects in the Northeast and Mid-Atlantic. She is interested in feedback from the workgroup on their interest in the workshop and ideas for topics and content.

- [Presentation](#) (slides 1-19): Anna Hamilton
 - Examining the use of SLAMM simulations – six sites
 - High Marsh changes – tipping point in between 2050 and 2100
Focus – Determining where the gains and the losses are; study evaluated DE and NJ sub-sites
 - Recommendation: consider the type of marsh when comparing vulnerability
 - Thematic question: for overall marsh, which sites look relatively stable at 2050 and which sites expect to experience tipping points?; overall, much more marsh loss than gains
 - Included impacts of storm surge, such as inundation, frequency of storm hits, category 1 and 3 hurricanes (used SLOSH model)
 - Marsh condition scores – slide 14 allows for comparing vulnerability across sites using different metrics (% change in marsh acreage by 2050 from sea level rise, hurricane strikes, category 3 hurricane inundation)
 - Summary for managers:
 - This process can be used at multiple levels like prioritizing action or informing management practices
 - Has significant application within the Chesapeake Bay
- [Presentation](#) (slides 20-26): Jordan West
 - Preparing for a multi-regional workshop on protecting coastlines that would take place early next year virtually, no later than May of 2022.
 - Rough workshop outline:
 - Day 1: EPA Research Presentations on coastal resiliency work:
 - Integrating related but parallel tracks of work
 - Lessons learned, synthesis
 - Day 2: Partner Panels:
 - CBP and partners invited to collaborate on interests, priorities, and topics
 - Workshop topics include coastal wetlands vulnerability and resilience, applications of resilience-based management, transferability of methods across regions, etc. (see slide 25)
 - Workshop organizers will ask for feedback on topics and the structure of workshop.

- Discussion:
 - Christopher Spaur mentioned in relation to the presentation example of the Delaware Bay that: “(There is a) much bigger tidal range in Delaware Bay than Chesapeake Bay. Presumably greater accretion potential than Chesapeake.”
 - Peter Tango’s comment in chat: “One of the curiosities I find with all this excellent work - on the one hand, we seem to have pinpoint assessments of wetlands to be impacted, wetland migration, and yet, we have needed a wetland indicator to track wetland acres and seem to have no agreement on wetlands and a wetland tracking mechanism. That there are those two worlds does not make sense to me. How can we be so good, so precise for projecting marsh effects but no consistent data set as a baseline and tracking method for wetlands?”
 - Jordan West: This would be a great idea for one of the “challenges” topics and should be included in the workshop.
 - Pamela Mason said that: “The issue is that ‘wetlands’ are not a landcover for the CBP until seen in remote sensed data. Wetlands restored are tracked as projects. Potential wetlands can be modelled to identify the possible universe for migration, but management is critical to make or allow that to happen.”
 - Julie Reichert-Nguyen mentioned examining commonalities on what comprehensive resiliency plans include for marshes. She asked: “What can we learn across different geographies?”
 - Jordan West: Another major goal of the workshop will be to find similar goals from a different context of approaches, histories, and organizations. A goal of workshop will be to find what all the different organizations have in common.
- Resources:
 - SLAMM report with all simulations and data sets available at: <https://www.epa.gov/gcx/about-delaware-bay-wetland-projections>

3:20 PM Wrap Up

3:30 PM Adjourn

Next Meeting: October 18, 2021

This will be a special cross-workgroup meeting with the Urban Stormwater Workgroup to discuss BMP climate resilience work.

Participants: Breck Sullivan, Alexander Gunnerson, Kristin Saunders, Megan Fitzgerald, Margaret Zacharias, Adrienne Kotula, Molly Mitchell, Elizabeth Andrews, Lena Easton-Calabria, Yi Liu, Pamela Mason, Sarah Hilderbrand, Joe Weber, Katie Davis, Jennifer Miller Herzog, Kevin Hess, Kevin Du Bois, Erin Burman, Christopher Spaur, Sally Claggett, Peter Tango, Jackie Specht, Katie Dyer, Peter Claggett, Jim George, Megan Ossmann, Taryn Sudol, Jessica Rodriguez, Rachel Marks, Roxolana Kashuba, Anna Hamilton, Donna Bilkovic, Nora Jackson, Nancy Roth, John Wolf, Cathy Wigand, Mark Bennet, Kayla Clauson, Scott Phillips, Nicole Carlozo, Debbie Herr Cornwell, Ashley Gordon, Jennifer Starr, Amy Goldfischer, Ken Hyer, Jordan West, Ben McFarlane, Julie Reichert-Nguyen